

DISCUSSION OF THE AMENDMENTS

Claims 1, 3, 5 and 11 are currently amended.

Claims 2 and 10 are original.

Claims 4, 6-9 and 12-20 were previously presented.

Upon entry of the amendment, claims 1-20 will be active.

The amendments to claims 1, 3 and 11 are supported by the claims as previously presented.

The amendment to claim 5 is supported by claim 4 as previously presented and on page 2, lines 7-10 of the specification.

No new matter has been added.

REMARKS

Claims 1-6 and 9-17 were rejected under 35 U.S.C. §103(a) over Motani et al. '542 (U.S. Patent No. 4,990,542) and Motani et al. '033 (U.S. Patent No. 5,317,033) in combination with BASF EP (EP 0915127) and BASF WO (WO 98/51735). Claims 7, 8 and 18-20 were rejected under 35 U.S.C. §103(a) over the combination of Motani '542, Motani '033, BASF EP, BASF WO and Wesselmann (U.S. Patent No. 4,585,825).

The claimed process would not have been rendered unpatentable under 35 U.S.C. §103(a) over the cited references because the cited references do not teach or suggest cutting of the polymer melt containing blowing agent downstream at the die at reduced pressure with foaming to give foam beads.

The present disclosure involves a process for producing foam beads from thermoplastic polymers. The process includes addition of a blowing agent to a thermoplastic melt then cooling and extrusion, through a die, of the polymer melt containing blowing agent and then cutting of the polymer melt containing the blowing agent downstream of the die at reduced pressure with foaming to give foam beads.

Motani '033 and Motani '542 describe producing synthetic resin foam with cells having two sizes. The process involves forming foam sheets with a thickness of 10 to 150mm (Motani '033, column 9 lines 8-17) or thickness of 10 to 400mm (Motani '542, column 9, lines 4-10).

As the Office notes on page 3 of the Office Action, the Motani references do not teach or suggest a process involving cutting of the polymer melt containing blowing agent downstream of the dies at reduced pressure to give foam beads. The Office relies on the BASF references to overcome the deficiencies of the Motani references.

The BASF references describe expandable polystyrene containing athermanic particles. The expandable polystyrene may be produced by granulating a blowing agent containing polymer melt under water and pressure to prevent foaming (see page 3, lines 39 to 43 of the BASF EP translation). The particles may be foamed in a separate process in a pre-foamer and

then the foamed particles are sintered into sheet moldings. (See page 9, section E of the BASF EP translation).

Applicants note that the process in the BASF references is distinct from the claimed process because in the claimed process foamed beads are prepared directly under reduced pressure whereas the beads in the BASF references are not formed foamed under reduced pressure but formed under pressure and foamed later in a separate process. Accordingly, the BASF references teach away from the claimed process.

In fact, there is no motivation to combine the Motani references with the BASF references because they are different processes which teach away from each other in regard to the extrusion process. Indeed, modification of Motani with the pressure extrusion step in BASF would render Motani unsuitable for its intended purpose which seeks to form a foamed sheet.

Because the Motani and BASF references do not teach or suggest all the recitations of the claimed process, the claimed process would not have been obvious over these references. Therefore, Applicants respectfully request that the Office withdraw the rejection of claims 1-6 and 9-17 under 35 U.S.C. §103(a) over Motani '542, Motani '033, BASF EP and BASF WO.

Wesselmann describes monovinylidene aromatic polymer compositions; however, Wesselman does not teach or suggest a process for producing foam beads that involves cutting of the polymer melt containing blowing agent downstream of the dies at reduced pressure with foaming to give foam beads. Accordingly, Wesselmann in combination with the Motani and BASF references would not have rendered the claimed process unpatentable under 35 U.S.C. §103(a). As such, Applicants respectfully request that the Office withdraw the rejections of claims 7, 8 and 18-20 under 35 U.S.C. §103(a).

In view of the above remarks, applicant believes the pending application is in condition for allowance. Favorable reconsideration is respectfully requested.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 03-2775, under Order No. 12810-00034-US from which the undersigned is authorized to draw.

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Respectfully submitted,
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